

Facility Name: **Bio Energy (Georgia II) LLC**  
City: Valdosta  
County: Lowndes  
AIRS #: 04-13-185-00115

Application #: TV-428449  
Date Application Received: April 23, 2021  
Permit No: 4911-185-0115-V-03-0

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## Introduction

This narrative is being provided to assist the reader in understanding the content of referenced operating permit. Complex issues and unusual items are explained here in simpler terms and/or greater detail than is sometimes possible in the actual permit. The permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

**I. Facility Description****A. Facility Identification****1. Facility Name:**

Bio Energy (Georgia II) LLC

**2. Parent/Holding Company Name**

Energy Developments, Inc.

**3. Previous and/or Other Name(s)**

ESG Biofuels Southern Georgia, LLC

**4. Facility Location**

2995 Wetherington Lane  
Valdosta, Georgia 31601

Bio Energy (Georgia II) is located at the Pecan Row Landfill.

**5. Attainment, Non-attainment Area Location, or Contributing Area**

Bio Energy (Georgia II) LLC is located in Lowndes County, which is classified as attainment or nonclassifiable for all pollutants.

**B. Site Determination**

Bio Energy (Georgia II) LLC operates a power generation facility located at the Evergreen and Pecan Row Landfills. Landfill gas (LFG) from the Evergreen Landfill (AIRS No. 185-00108) and Pecan Row Landfill (AIRS No. 185-00096) gas collection and control systems (GCCS) is routed to Bio Energy (Georgia II) LLC for use in the power generation facility's engines. The LFG is treated by filtering, dewatering, and compressing the gas. The treated LFG is then burned in the engines to produce electricity for sale. Excess LFG not used in the power facility is burned in the landfill's existing open flare. The operation of the power facility is managed separately from the landfills. There is no connection between the owner of the power facility, Energy Developments, Inc. (EDI), and the owner of the landfills, Advanced Disposal. The only source of LFG for the power facility, however, is the Evergreen and Pecan Row Landfills. Because the power facility is located at the landfills and the landfills are the only source of LFG for the power facility, the landfill and power facility are considered one site for Title V and PSD purposes.

## C. Existing Permits

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/Effectiveness	Purpose of Issuance
4911-185-0115-V-02-0	11/21/2016	Initial Title V permit
4911-185-0115-V-02-1	5/24/2017	Construction of Generator GEN4
4911-185-0115-V-02-2	5/4/2018	Add site-wide CO limit for PSD avoidance
4911-185-0115-V-02-3	7/5/2022	Replacement of GEN1 through GEN3 with identical engines

## D. Process Description

## 1. SIC Codes(s)

4911

The SIC Code(s) identified above were assigned by EPD's Air Protection Branch for purposes pursuant to the Georgia Air Quality Act and related administrative purposes only and are not intended to be used for any other purpose. Assignment of SIC Codes by EPD's Air Protection Branch for these purposes does not prohibit the facility from using these or different SIC Codes for other regulatory and non-regulatory purposes.

Should the reference(s) to SIC Code(s) in any narratives or narrative addendum previously issued for the Title V permit for this facility conflict with the revised language herein, the language herein shall control; provided, however, language in previously issued narratives that does not expressly reference SIC Code(s) shall not be affected.

## 2. Description of Product(s)

Bio Energy (Georgia II) LLC generates electricity for sale.

## 3. Overall Facility Process Description

Bio Energy (Georgia II) LLC is a power generation facility located at the Evergreen and Pecan Row Landfills. The power facility consists of four LFG-fueled, lean burn, internal combustion engines rated at 1.6 megawatts each. LFG from the Evergreen and Pecan Row Landfills GCCSs is routed to Bio Energy (Georgia II) LLC for use in the engines. The LFG received from the landfills is routed to a LFG treatment system to remove water and other contaminants. The treated LFG is then burned in the engines to produce electricity for sale.

## 4. Overall Process Flow Diagram

The facility provided a process flow diagram in their Title V permit application.

## E. Regulatory Status

## 1. PSD/NSR

The combined site of Bio Energy (Georgia II) LLC and Evergreen and Pecan Row Landfills is a minor source under the PSD regulations. Emissions of all PSD regulated pollutants are less than the major source threshold of 250 tons per year. Landfills and LFG powered electricity generating facilities are not included in the list of 28 source categories that have a 100 tpy threshold to be subject to PSD regulations. Condition 3.2.1 limits CO emissions from the entire facility (including the landfills) to 249.9 tons per year to ensure that the facility is a minor source under PSD regulations.

## 2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	Yes			✓
PM <sub>10</sub>	Yes			✓
PM <sub>2.5</sub>	Yes			✓
SO <sub>2</sub>	Yes	✓		
VOC	Yes			✓
NO <sub>x</sub>	Yes	✓		
CO	Yes	✓		
TRS	N/A			
H <sub>2</sub> S	N/A			
Individual HAP	Yes	✓		
Total HAPs	Yes	✓		

## 3. MACT Standards

40 CFR 63 Subpart AAAAA – National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills

The facility is subject to 40 CFR 63 Subpart AAAAA – “National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills.” Subpart AAAAA mirrors 40 CFR 60 Subpart XXX and adds requirements for bioreactor landfills.

40 CFR 63 Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The engines are subject to 40 CFR 63 Subpart ZZZZ – “National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.” Subpart ZZZZ regulates emissions from reciprocating internal combustion engines at major and area sources of HAPs. For engines at a major source of HAPs, greater than 500 horsepower, and combusting LFG equivalent to 10 percent or more of its gross heat input on an annual basis, the only applicable requirements are designed to demonstrate that at least 10 percent of the heat input comes from LFG. Because these engines are only capable of burning LFG, the source is not required to monitor fuel used per an EPA waiver.

4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	No
Program Code 8 – Part 61 NESHAP	No
Program Code 9 - NSPS	Yes
Program Code M – Part 63 NESHAP	Yes
Program Code V – Title V	Yes

## Regulatory Analysis

### II. Facility Wide Requirements

A. Emission and Operating Caps:

None applicable.

B. Applicable Rules and Regulations

Not applicable.

C. Compliance Status

No noncompliance issues have been identified by the facility.

D. Permit Conditions

None applicable.

### III. Regulated Equipment Requirements

#### A. Equipment List for the Process

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
GEN1	Generator No. 1  Caterpillar G3520C (2,233 HP)	40 CFR 60 Subpart A 40 CFR 60 Subpart JJJJ 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ 391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	N/A	None
GEN2	Generator No. 2  Caterpillar G3520C (2,233 HP)	40 CFR 60 Subpart A 40 CFR 60 Subpart JJJJ 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ 391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	N/A	None
GEN3	Generator No. 3  Caterpillar G3520C (2,233 HP)	40 CFR 60 Subpart A 40 CFR 60 Subpart JJJJ 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ 391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	N/A	None
GEN4	Generator No. 4  Caterpillar G3520C (2,233 HP)	40 CFR 60 Subpart A 40 CFR 60 Subpart JJJJ 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ 391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	N/A	None
TS	Landfill Gas Treatment System	40 CFR 60 Subpart A 40 CFR 60 Subpart XXX 40 CFR 63 Subpart A 40 CFR 63 Subpart AAAA	N/A	None

#### B. Equipment & Rule Applicability

##### Emission and Operating Caps –

In order to be a PSD minor source, the entire site (including Evergreen and Pecan Row Landfills) is limited to 249.9 tons of CO per year.

##### Applicable Rules and Regulations -

##### 40 CFR 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

Subpart JJJJ regulates emissions from spark ignition internal combustion engines where construction commences after June 12, 2006, and, for emergency generators, where the engine is manufactured on or after January 1, 2009. Because the engines were manufactured after these dates, this rule applies.

40 CFR 60 Subpart XXX – Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014

The Evergreen and Pecan Row Landfills are subject to the requirements of 40 CFR 60 Subpart XXX. According to 40 CFR 60.762(b)(2)(iii), a landfill with an NSPS GCCS must route all the collected gas to an open flare, an enclosed combustor, or a treatment system. The LFG is treated by Bio Energy (Georgia II) prior to its use in the engines.

40 CFR 63 Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Subpart ZZZZ regulates emissions from reciprocating internal combustion engines at major and area sources of HAPs. This facility is a major source of HAP emissions. For an engine located at a major source of HAPs, greater than 500 horsepower, and combusting LFG equivalent to 10 percent or more of its gross heat input on an annual basis, the only applicable requirements are designed to demonstrate that at least 10 percent of the heat input comes from LFG. Because these engines are only capable of burning LFG, the source is not required to monitor fuel used per an EPA waiver.

40 CFR 63 Subpart AAAA – National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills

Subpart AAAA was promulgated on January 16, 2003 and is effective for existing landfills as of January 16, 2004. This rule applies to each landfill that received waste after November 6, 1987 that is a major source of HAPS, is co-located with a major source of HAPS, or is larger than 2.5 million megagrams and 2.5 million cubic meters and has NMOC emissions greater than 50 megagrams per year. These landfills are required to install a gas collection and control system (GCCS) to comply with 40 CFR 60 Subpart XXX. Subpart AAAA is, therefore, applicable. Subpart AAAA mirrors the requirements of 40 CFR 60 Subpart XXX and adds conditions for bioreactors. Note that as of September 27, 2021, a startup, shutdown, and malfunction (SSM) plan is no longer required.

391-3-1-.02(2)(b) – Visible Emissions

Rule (b) limits the opacity of visible emissions from any air contaminant source that is subject to some other emission limitation under 391-3-1-.02(2). The opacity of visible emissions from regulated sources may not exceed 40 percent under this general visible emission standard. Because all of the equipment at the facility burn LFG exclusively, it is expected that the opacity will be well below 40 percent.

391-3-1-.02(2)(g) – Sulfur Dioxide

Rule (g) applies to all “fuel burning” sources. The fuel burning sources at the proposed site are the three engines. The fuel sulfur content limit for fuels burned is 2.5 percent by weight, in accordance with Rule (g)2. The only fuel used at this facility is LFG, which will comply with Rule (g).

### C. Permit Conditions

Conditions 3.2.1, 3.3.1 through 3.3.3, 3.3.5 through 3.3.9, 3.4.1, and 3.4.2 from the existing permit have been included in this permit. Conditions 3.3.4 and 3.3.10 had previously been removed from the existing permit, so Conditions 3.3.5 through 3.3.9 have been renumbered Conditions 3.3.4 through 3.3.8.

Condition 3.2.1 establishes a site-wide 249.9 ton per year CO limit to avoid PSD requirements.

Conditions 3.3.1 and 3.3.2 contain the general applicability of 40 CFR 60 Subparts A and JJJJ and 40 CFR 63 Subparts A and ZZZZ to the engines.

Condition 3.3.3 contains the NO<sub>x</sub>, CO, and VOC limits that apply to the engines per NSPS Subpart JJJJ.

Condition 3.3.4 incorporates the 40 CFR 60 Subpart JJJJ requirement to operate the engines to minimize emissions.

Conditions 3.3.5 and 3.3.6 contain the general applicability of 40 CFR 60 Subparts A and XXX and 40 CFR 63 Subparts A and AAAA. Note that the Evergreen and Pecan Row Landfills are now subject to Subpart XXX instead of Subpart WWW, so Condition 3.3.5 has been updated.

Conditions 3.3.7 and 3.3.8 requires that the landfill gas treatment system be operated in accordance with the requirements of 40 CFR 60 Subpart XXX (updated from Subpart WWW).

Conditions 3.4.1 and 3.4.2 contain the emission limits due to Georgia Rules (b) and (g).

## IV. Testing Requirements (with Associated Record Keeping and Reporting)

### A. General Testing Requirements

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days (or sixty (60) days for tests required by 40 CFR Part 63) prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

### B. Specific Testing Requirements

Conditions 4.2.1, 4.2.2, 4.2.3, and 4.2.4 from the existing permit have been included in this permit. Condition 4.2.5 was for a one-time test which has been completed, so it is not included in this permit. Conditions 4.2.6 and 4.2.7, which were included in a 502(b)(10) amendment, are duplicate requirements of Conditions 4.2.3 and 4.2.4 and are, therefore, no longer needed.

The NSPS for spark ignition engines (40 CFR 60 Subpart JJJJ) requires that non-certified engines that are greater than 500 horsepower conduct tests for NO<sub>x</sub>, CO, and VOC every 3 calendar years or 8,760 operating hours.

Conditions 4.2.1 and 4.2.2 contain 40 CFR 60 Subpart JJJJ periodic testing requirements for the engines.

Condition 4.2.3 which originally contained the initial test requirement for GEN4 has been revised to require an initial test for any new or replacement engine per the requirements of 40 CFR 60 Subpart JJJJ.

Condition 4.2.4 requires that a CO emission factor for each engine be established whenever the engines are tested to show compliance. At a minimum, these engines are required to be tested for compliance every three years.

## **V. Monitoring Requirements**

### **A. General Monitoring Requirements**

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

### **B. Specific Monitoring Requirements**

Condition 5.2.1 from the existing permit has been included in this permit.

Condition 5.2.1 a. requires a non-resettable hour meter on each engine. The cumulative hours of operation are used to determine when the next test is required per Condition 4.2.1 and are used in the CO emission calculation in Condition 6.2.4.

Condition 5.2.1b. requires monitoring of fuel flow to the Landfill Gas Treatment System per Subpart XXX requirements.

Condition 5.2.1c. requires monitoring of the filtration parameter according to the monitoring plan for the Landfill Gas Treatment System per Subpart XXX requirements.

Condition 5.2.1d. requires monitoring of the de-watering parameter according to the monitoring plan for the Landfill Gas Treatment System per Subpart XXX requirements.

Condition 5.2.1e. requires monitoring of the compression parameter according to the monitoring plan for the Landfill Gas Treatment System per Subpart XXX requirements.

### **C. Compliance Assurance Monitoring (CAM)**

Not Applicable

## **VI. Record Keeping and Reporting Requirements**

### **A. General Record Keeping and Reporting Requirements**

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a semiannual basis.

### **B. Specific Record Keeping and Reporting Requirements**

Conditions 6.2.1, 6.2.2, and 6.2.4 through 6.2.6 from the existing permit have been included in this permit. Condition 6.2.3 had previously been removed from the existing permit, so Conditions 6.2.4 through 6.2.6 have been renumbered Conditions 6.2.3 through 6.2.5. Condition 6.2.7, which were included in a 502(b)(10) amendment, are duplicate requirements of Condition 6.2.2 and are, therefore, no longer needed.

The NSPS for spark ignition engines (40 CFR 60 Subpart JJJJ) and the RICE MACT (40 CFR 63 Subpart ZZZZ) requires specific record keeping and reporting requirements for the generator engines.

Condition 6.2.1 requires the Permittee keep records of the information required in 40 CFR 60.4245(a) and 40 CFR 63.6655(c).

Condition 6.2.2 which originally contain the initial notification requirement for GEN4 has been revised to require the initial notification for the new or replacement engine per the requirements of 40 CFR 60 Subpart JJJJ.

Conditions 6.2.3, 6.2.4, and 6.2.5 are used to calculate the CO emissions from the entire site to show compliance with the PSD avoidance limit.

Condition 6.2.6 requires the Permittee develop a site-specific monitoring plan for the Landfill Gas Treatment System per the requirements of 40 CFR 60 Subpart XXX.

Condition 6.2.7 requires the Permittee keep a site-specific monitoring plan for the Landfill Gas Treatment System and supporting documents per the requirements of 40 CFR 60 Subpart XXX.

**VII. Specific Requirements****A. Operational Flexibility**

Not applicable.

**B. Alternative Requirements**

Not applicable.

**C. Insignificant Activities**

See Permit Application on GEOS website.  
See Attachment B of the permit

**D. Temporary Sources**

Not applicable.

**E. Short-Term Activities**

Not applicable.

**F. Compliance Schedule/Progress Reports**

Not applicable.

**G. Emissions Trading**

Not applicable.

**H. Acid Rain Requirements**

Not applicable.

**I. Stratospheric Ozone Protection Requirements**

Not applicable.

**J. Pollution Prevention**

Not applicable.

**K. Specific Conditions**

Not applicable.

**VIII. General Provisions**

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Template Condition 8.14.1 was updated in September 2011 to change the default submittal deadline for Annual Compliance Certifications to February 28.

Template Condition Section 8.27 was updated in August 2014 to include more detailed, clear requirements for emergency generator engines currently exempt from SIP permitting and considered insignificant sources in the Title V permit.

Template Condition Section 8.28 was updated in August 2014 to more clearly define the applicability of the Boiler MACT or GACT for major or minor sources of HAP.

**Addendum to Narrative**

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//